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Title: Large Whale Entanglement Mitigation Gear Research Projects

Subject: Final Report - Large Whale Entanglement Mitigation Gear Research Projects

Part 1 - Evaluation of Fixed Gear Fishing with No Vertical Lines

Part 2 - At-Sea Testing of a Reversing or "Thwartable" Bottom Link System

Evaluation of Fixed Gear Fishing with No Vertical Lines

Executive Summary

This project evaluated the effect of "fishing" lobster trawls without the use of vertical lines in the water column. These vertical lines are referred to as buoy lines or end lines and serve to mark the lobster trawl position and provide a means to retrieve the lobster traps from the ocean floor. With these buoy lines removed all that remains of the lobster trawl is the sink ground line that sits along the ocean floor and the lobster traps tied to the ground line making a "chain of traps" with approximately 10 traps to each trawl. Without the use of buoy lines, the location of these experimental lobster trawls were unknown to area fishermen other than the contracted fishermen who set the gear and recorded the position through the use of a Global Positioning System (GPS). Also, not having a buoy line mandated that these lobster trawls be snagged/grappled from the ocean floor with the use of a specialized towing hook (grappling hook) and line. This report summarizes the evaluation of the affects these hauling modifications had on a specific fishing operation and how the removal of the vertical lines effected other area fishermen.

Purpose

The Atlantic Large Whale Take Reduction Team has identified "vertical lines "used in the commercial fixed gear fisheries as an entanglement threat to the Atlantic large whale populations, such as right, humpback, and fin whales. Vertical lines used in these fixed gear fisheries are commonly refered to as " buoy lines or end lines". These buoy lines/end lines, rigged with a surface buoy(s), are used to mark the gears location and used to retrieve the gear from bottom. Examples of fixed gear fisheries are gillnet, fish pot and lobster trap fisheries. In this project we are looking at the lobster trawl fishery. A lobster trawl is where more then one

lobster trap is rigged to a buoy line/ end line and often a lobster trawl will have an endline at each end of a trawl.

Objective

To evaluate the effects of "fishing" lobster trawls without the use of vertical lines. More specifically, what effect hauling modifications had on a specific fishing operation and how the removal of the vertical lines effected other area fishermen.

Approach

This projected researched the aspects of fishing, hauling and setting lobster trawls without the use of end lines and/or surface buoy systems. The lobster trawls in this project averaged 9 pots per trawl, with the traditional gear configuration having an end line at each end of the trawl, the experimental gear configuration simply removes the end lines leaving only the sinking ground line and traps lying on the ocean bottom. With the experimental gear absent of vertical lines/ end lines, and there for having no surface buoys to mark the gear location, dictated that the gear position will be located with the use of an electronic Chart Plotter/GPS. The removal of the end lines, from these experimental lobster trawls, dictate that the retrieval of the experimental gear is through the use of specialized grappling equipment that snags the trawl's sinking ground line from the ocean floor. The sinking ground line, lies on bottom and connects each trap in the lobster trawl, making a train of traps with 10 to 15 fathoms of sinking ground line separating each trap. The traditional lobster trawls where located with the use of a surface buoy and hauled by the end lines using a standard trap hauler.

Project work

The Pemaquid Fishermen's Coop contracted Captain Skip Carter to carry out this vertical line research project. Captain Carter provided commercial fishing vessel Erica Maria, fuel, commercial fishing gear, crew, hauling equipment, Global Positioning System, data on depth/bottom, weather, tides and daily haul record keeping. Contracted cost for Captain Carter's commercial fishing operations, meet all projected budget specifications as outlined in the original project narrative.

Both experimental and standard sets of lobster trawls were hauled totaling 412 hauls. Recorded haul logs were completed and copies were supplied to John Higgins, NMFS PRD agent.

Haul Log Sample Sheet

Date

Haul number

Lat/Lon position

Haul Time Start (grapple going overboard or Buoy gaffed)

Haul Time stop (first trap at the rail of boat)

Wind direction and speed

Wave height

Water depth

Bottom type

Comments

Findings

Haul Log Data from 206 Experimental and 206 Standard hauls

1. Average depth range – 15 to 40 fathom
2. Bottom type range Mud to rocky boulder
3. Experimental gear average haul time using grapple method – 14.2 minutes
4. Standard gear average haul time using traditional pot hauler – 1 minute
5. Number of times a lobster trawl was set over by another lobster trawl:

   Experimental trawl – 32 set overs

   Standard trawl – 1 set over

6. Captain Carter's Comments regarding experimental trawl hauls.

A. Even with experimental trawl haul times being 14 times greater than the standard haul times, these haul times do not account for days the experimental trawls could not be hauled as a result of extreme weather, positioning vessel with recorded GPS coordinates to cast grapple overboard or time dealing with set overs once the first trap is aboard.
B. Loss in productive work time/ trap hauling capacity, which equals loss in profits.
C. Increased risk of injury when using the grapple, particularly at the trap hauler.
D. Absence of surface buoy out of compliance with Federal and State mandated gear marking requirements

E. Very difficult to grapple trawl's ground line when the tide currents are strong, when running over 11ft heights in the Gulf of Maine, sea conditions greater than 4 feet in height and/or wind speed over 20 to 25 knots.
F. Gear conflict with other fixed and mobile gear fisheries as a result of not having the experimental lobster trawl position clearly marked with a surface buoy.

Interview notes with Captain Carter

Interviews were conducted by John Higgins, commercial gear specialist for the National Marine Fisheries Service, with Captain Carter to gather information not easily recorded on the haul logs. These interviews were conducted prior to the project start, during the project work and at the completion of this lobster trawl vertical line project. The following are comments reported by John Higgins to the Pemaquid Fishermen's Coop, following his conversations with Captain Carter.

Pre work interview

Prior to the start of the project work Captain Carter explained to Mr. Higgins how he had to discuss the project with fishermen who fish/set gear in the same area as he sets gear and went on to say he could not properly conduct the project if it weren't for the cooperation of fishermen who set gear in the projects fishing area. Having lobster trawls along the ocean bottom and having no surface buoy alerting other fisherme to the position of these experimental lobster trawls, promotes gear conflict and takes valuable time from area fishermen who are not being compensated for this lose in time/profits. It is the great working relationship that Captain Carter has with his fellow area fishermen that allowed this project to be conducted properly and not have to deal with retaliation from other fishermen for the difficulties this project imposed on their fishing operations. Carter went to say, if these experimental trawls were implemented into everyday fishing operations, retaliation from angered fishermen would be a regular occurrence.

During the work interviews

While Captain Carter was actively hauling through the experimental lobster trawls and the standard trawls as well, he had several conversations with Mr. Higgins. Most of what Mr. Carter had to say in these discussions has been captured in his comments on the log sheets with an emphasis on time spent because of gear being set over the unmarked experimental gear. Other discussions reported on area fishermen losing patience as a result of fishing around the unmarked gear/trawls. Captain Carter discussed how fishermen must work together when fishing an area together. There are often dozens of fishermen setting lobster trawls on the "same piece of bottom" and they must work as team so one knows what the other is doing or they will all be wasting time and money entangled with one another. This team work approach

needed to successfully lobster fish together cannot be over stated and having one fishermen setting un-marked gear amongst other fishermen's gear, creates problems, problems Captain Carter had to deal with.

Interviews at works completion

Because Captain Carter, the Pemaquid Fishermen's Coop (PFC) and Mr. Higgins were in constant contact with one another during the duration of the entire project, there was not a great deal of information left unreported in regular discussion and/or the daily haul logs. The PFC found working with the Grants Online user friendly and the tel call # hooked to a live voice, very helpful. When asked, Captain Carter found all billing and payments meeting the project contract and processed in a timely fashion. Captain Carter reported to Mr. Higgins that his strong working relationship with fellow fishermen remains strong and these fellow fishermen were interested in the project results.

Evaluation

The results of this vertical line project has been documented and delivered to the National Marine Fisheries. These project results were presented to the Atlantic Large Whale Take Reduction Team (ALWTRT) at the 2012 ALWTRT meeting, where the risk of vertical line entanglement with large whales, were the focus of this teams work. A hard copy of the power point presentation was supplied to all of the ALWTRT members.

At-Sea Testing of a Reversing or "Thwartable" Bottom Link System

The production of a "Thwartable" link for at sea testing was the responsibility of the National Marine Fisheries Service. The Thwartable link was not produced and therefore could not be tested by the Pemaquid Fishermen's Coop members.